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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,548	03/17/2006	Yo Yamato	3273-0221PUS1	7436

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EXAMINER	
CHANG, VICTOR S	

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
01/28/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/572,548	YAMATO ET AL.	
	Examiner	Art Unit	
	VICTOR S. CHANG	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-12* is/are pending in the application.

4a) Of the above claim(s) *5 and 6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-3 and 7-11* is/are rejected.

7)☐ Claim(s) *12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Applicants' amendments/remarks and interview summary filed on 11/23/2009 have been entered. Claims 1 and 7 have been amended. New claims 11 and 12 have been entered. Claims 1-3 and 7-12 are active.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Rejections not maintained are withdrawn.

Rejections based on Prior Art

4. Claims 1-3 and 7-10 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zhang et al. [US 20040086782].

Zhang's invention relates to a battery separator (cell separator). The battery separator is a thermoplastic microporous membrane. Useful thermoplastics include polyvinyl chlorides, nylons, fluorocarbons, polyolefins, polyesters, etc. [0010]. The membrane is made by phase inversion (conversion) process [0012].

For claims 1-3, Zhang's battery separator has multiplicity of communicating micropores, which are necessarily required for ion passages. Further, the separator is necessarily chemical resistant to the electrolyte in the battery. The phase inversion manufacturing process inherently converts a solidifying polymer solution into a microporous membrane. In the absence of any distinct film base composition of the claimed invention, Zhang's membrane of a single polymer, e.g., polyester, reads on both the film base and the solid layer of the claimed invention. Zhang is

silent about porosity, average pore size, and thickness of the membrane. However, since Zhang teaches generally the same structure (microporous membrane) and composition (polyester), the same manufacturing process (phase inversion), and for the same end use (battery separator) as the claimed invention, workable pore size, porosity and thickness of the membrane are deemed to be either anticipated, or obvious routine optimizations, dictated by the same end use requirements. Regarding the method of coating and drying, since the process limitation has not been shown on the record to produce a patentably distinct article, the formed articles are rendered *prima facie* obvious, and this limitation at the present time has not been given patentable weight.

For claims 7-10, regarding the weight percent of the solid layer relative to the porous film base, since Zhang's single polymer membrane reads on both the solid layer and the film base of the claimed invention, Zhang's membrane inherently reads on the entire range as claimed, because clearly the solid layer merely accounts a portion of the total weight of the membrane. Further, for the same reasons set forth above, the product-by-process limitations at the present time has not been given patentable weight.

5. Claim 11 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2003-138057 [English abstract].

For new claim 11, JP '057 teaches a polyimide microporous membrane useful for battery separator. The membrane is produced by phase inversion process from a solution of polyimide dissolved in an organic solvent. For the same reasons set forth above, since JP '057 teaches generally the same structure (microporous membrane) and composition (polyimide), the same manufacturing process (phase inversion), and for the same end use (battery separator) as the claimed invention, workable pore size, porosity and thickness of the membrane are deemed to be

either anticipated, or obvious routine optimizations, dictated by the same end use requirements. Similarly, JP '057's single polymer membrane inherently reads on the entire range of the weight percentage of the coat layer relative to the film base as claimed.

Allowable Subject Matter

6. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicants argue at Remarks page 11:

> "Zhang fails to teach or suggest at least the following presently claimed limitations:
> (a) a porous film comprising a film base, a multiplicity of communicating micropores having an average pore size of 0.01 ~m or more and 5 gm or less, and a chemical-resistant polymeric compound which coats the film base;
> (b) the film base and the multiplicity of communicating micropores are produced by a phase conversion method in which mixtures containing polymers are cast as films and then introduced to solidifying liquids;
> (c) an average rate of open pores inside the porous film (porosity) is 30% to 80%;
> (d) an amount of the coat of the chemical-resistant polymeric compound is 0,01 to 50 percent by weight relative to the porous film;
> (e) the coat of the chemical-resistant polymeric compound coating the film base forms a thin solid layer over cell wall surfaces throughout the porous structure of the film base and is formed by subjecting a solution of the chemical- resistant polymeric compound or a precursor thereof dissolved in a solvent which can dissolve the polymeric compound or a precursor thereof to a coat forming procedure, with or without further subjecting the coat formed to treatment with at least one selected from the group consisting of heat, ultraviolet rays, visible radiations, electron beams, and radioactive rays; and
> (f) the porous film maintains the properties of the film base."

However, in the absence of any distinct film base composition in claims 1-3 and 7-10 of instant application, Zhang's membrane of a single polymer, e.g., polyester, reads on both the film base and the solid layer of the claimed invention. Zhang is silent about porosity, average pore size, and thickness of the membrane. However, since Zhang teaches generally the same structure (microporous membrane) and composition (polyester), the same manufacturing process (phase inversion), and for the same end use (battery separator) as the claimed invention, workable pore size, porosity and thickness of the membrane are deemed to be either anticipated, or obvious routine optimizations, dictated by the same end use requirements. Regarding the method of coating and drying, since the process limitation has not been shown on the record to produce a patentably distinct article, the formed articles are rendered *prima facie* obvious, and this limitation at the present time has not been given patentable weight.

Applicants argue at page 12:

> "The Examiner appears to believe that the microporous thermoplastic membrane of Zhang inherently comprises a film base and communicating micropores, each of which inherently meet all the claimed limitations, such as average pore size, average rate of open pores inside the porous film, amount of coat of the chemical-resistant polymeric compound relative to the porous film, etc. Applicants respectfully and strongly disagree and submit that the Examiner has not fulfilled his burden of establishing a *prima facie* case of anticipation or obviousness."

However, clear reasoning has been provided as set forth above. For example, since Zhang teaches a battery separator, which necessarily requires the composition of the separator being at least chemically resistant to the electrolyte in the battery. Applicant may wish to specifically point out what is not missing in the grounds of rejection in the next reply.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VICTOR S. CHANG whose telephone number is (571)272-1474. The examiner can normally be reached on 6:00 am - 4:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794